IN THE CLAIMS:

Claim 1, 3, 8, 11, 13, 17, 21, 22, and 25 have been amended.

1. (currently amended) An at least two-bit equalization system to adjust an amplitude of an input signal in a channel [[for]] having a channel amplitude frequency response, comprising:

a decision subsystem to decide when the input signal is to be adjusted, and to produce a delayed input signal and at least two output signals utilized to assist in adjusting the delayed input signal;

an equalization step selection subsystem to select equalization step adjustment sizes to adapt to transmit media variations; and

an equalization subsystem to receive the delayed input signal, the at least two output signals from the decision subsystem, and the equalization step adjustment sizes from the equalization step selection subsystem, to apply the equalization step adjustment sizes to the delayed input signal and to the at least two output signals, and to produce an equalized output signal compensated for the channel amplitude frequency response.

2. (original) The equalization system of claim 1, wherein n is a number of bits equalized in the equalization system and m is a number of output signals generated by the decision subsystem, the equalization system having:

n greater than two; and

m equal to n.

3. (currently amended) A transmitting device to send an input signal on a channel, comprising:

an equalization system to perform at least a two-bit equalization, including

a decision subsystem to decide when the input signal is adjusted, and to produce a delayed input signal and at least two output signals to assist in adjusting the delayed input signal, and

an equalization step selection subsystem to select equalization step adjustment sizes to adapt to transmit media variations; and

an equalization subsystem to receive the delayed input signal, the at least two output signals from the decision subsystem, and the equalization step adjustment sizes from the equalization step selection subsystem, to apply the equalization step adjustment sizes to the delayed input signal and to the at least two output signals, and to produce an equalized output signal compensated for the channel amplitude frequency response; and

a transmitter to send the equalized output signal to the channel.

4. (original) The transmitting device according to claim 3, wherein n is a number of bits equalized in the equalization system and m is a number of output signals generated by the decision subsystem, the transmitting device having:

n greater than 2; and

m equal to n.

5. (original) A transmitting device according to claim 3, wherein the channel is a printed circuit board trace.

6. (original) A transmitting device according to claim 3, wherein the channel is a copper wire channel.

7. (original) A transmitting device according to claim 3, wherein the channel is an optical fiber channel.

8. (currently amended) A method for at least two-bit equalization of an input signal to compensate for a channel frequency response, comprising:

generating a delayed input signal;

generating at least two intermediate output signals to identify if and when adjustments need to be made to the delayed input signal;

converting the delayed input signal and the at least two intermediate output signals to a differential delayed input signal and at least two differential intermediate output signals;

selecting an equalization step size for each of the at least two intermediate output signals based on the channel frequency response;

dividing a tail current into at least three weighted current segments based on the equalization step size;

inputting the differential delayed input signal, the at least two differential intermediate output signals, and the at least three weighted current segments into at least three differential amplifiers that output at least three output currents; and

combining the at least three output currents to form an equalized output signal.

9. (original) The method of claim 8, wherein the weight of the weighted current segments is determined, by default set or by user, by a plurality of control bits in a control subsystem.

10. (original) The method of claim 9, wherein the number of control bits is six.

11. (currently amended) A two-bit equalization system to output an equalized signal compensated for a channel frequency response, comprising:

a decision subsystem to decide when an input signal is adjusted and to output a delayed input signal and two output signals, the decision subsystem having

a delay module to align the input signal with the two output signals,

an exclusive-or (XOR) circuit, an inverted exclusive-or (XNOR) circuit, and

a delay module to output a first output signal, and

a XOR circuit, an OR circuit, and a XNOR circuit to output a second output signal; and

an equalization subsystem to output the equalized signal compensated for a channel frequency response having

a tail current switch to direct a tail current,

a plurality of current control bits to partition the tail current into three branches with an amount of each current predetermined by selected control bits, and

three differential amplifiers to accept as input the partitioned tail current branches, the delayed input signal, the first output signal, and the second output signal from the decision subsystem, and to output three currents that are combined to form the equalized signal.

12. (original) The two-bit equalization system of claim 11, wherein the number of current control bits is six.

13. (currently amended) A transmitting device to send an ~~input signal~~ equalized output signal on a channel, comprising:

an equalization system to perform at least a two-bit equalization, including:

a decision subsystem to decide when an input signal is adjusted and to output a delayed input signal and at least two output signals, the decision subsystem having:

a delay module to align the input signal with the two output signals,

an exclusive-or (XOR) circuit, an inverted exclusive-or (XNOR) circuit, and a delay module to output a first output signal, and

a XOR circuit, an OR circuit, and a XNOR circuit to output a second output signal; and

an equalization subsystem to produce an equalized output signal compensated for a channel frequency response having:

a tail current switch to direct a tail current,

a plurality of current control bits to partition the tail current into three branches with an amount of each current predetermined by selected control bits, and

at least three differential amplifiers to accept as input the partitioned tail current branches and the delayed input signal, the first output signal, and the second output signal from the decision subsystem, and to output three currents that are combined to form the equalized output signal; and

a transmitter to send the equalized output signal ~~as the input signal~~ to the channel.

14. (original) A transmitting device according to claim 13, wherein the channel is a printed circuit board trace.

15. (original) A transmitting device according to claim 13, wherein the channel is a copper wire channel.

16. (original) A transmitting device according to claim 13, wherein the channel is an optical fiber channel.

17. (currently amended) A machine readable storage medium, comprising:

machine-readable program code, stored on the machine readable storage medium, the machine-readable program code having instructions, which when executed cause a machine to

generate a delayed input signal;

generate at least two intermediate output signals to identify if and when adjustments need to be made to the input signal;

convert the delayed input signal and the at least two intermediate output signals to a differential delayed input signal and at least two differential intermediate output signals;

select an equalization step size for each of the at least two intermediate output signals based on [[the]] a channel frequency response;

divide a tail current into at least three weighted current segments based on the equalization step size;

input the differential delayed input signal, the at least two differential intermediate output signals, and the at least three weighted current segments into at least three differential amplifiers that output at least three output currents; and

combine the at least three output currents to form an equalized output signal.

18. (original) The machine readable storage medium of claim 17, wherein the tail current is divided into three weighted current segments by a plurality of selected control bits.

19. (original) The machine readable storage medium of claim 18, wherein the tail current is divided into three weighted current segments by six control bits.

20. (previously presented) A method for transmit equalization of an input signal, comprising:

selecting at least two equalization step sizes;

dividing a tail current into at least three weighted current segments based on the at least two equalization step sizes;

inputting a differential delayed input signal into a differential amplifier and inputting at least two differential intermediate output signals into at least two additional differential amplifiers;

inputting the at least three weighted current segments into the differential amplifier and the at least two additional differential amplifiers to output at least three output currents; and

combining the at least three output currents to form an equalized output signal.

21. (currently amended) The method of claim 20, wherein a delayed input signal and at least two intermediate output signals are converted to form [[a]] <u>the</u> differential delayed input signal and the at least two differential intermediate output signals.

22. (currently amended) The method of claim 20, wherein the at least two intermediate output signals determine if and when adjustments are to be made to the delayed input signal.

23. (previously presented) The method of claim 20, wherein weight of the weighted current segments is determined either by default or by user, by a plurality of control bits in a control subsystem.

24. (previously presented) The method of claim 20, wherein the number of control bits is six.

25. (currently amended) A transmitting device, comprising:

an equalization step selection subsystem to select equalization step adjustment sizes to adapt to a channel characteristic and to transmit the equalization step sizes;

an equalization subsystem to receive the equalization step sizes, a delayed input signal, and at least two intermediate output signals, to apply the equalization step adjustment sizes to the delayed input signal and at least two intermediate output signals, and to produce an equalized output signal compensated for the channel characteristic; and

a transmitter to send the equalized output signal to a channel.

26. (previously presented) The transmitting device of claim 25, wherein the channel characteristic is the channel frequency response.

27. (previously presented) The transmitting device of claim 25, wherein the channel is a copper wire channel.

28. (previously presented) The transmitting device of claim 25, wherein the channel is a printed circuit board trace.

29. (previously presented) The transmitting device of claim 25, wherein the channel is an optical fiber channel.

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